Congestion Mitigation and Air Quality Improvement Program

Process Improvement Team

Final Recommendations and Summary Report

Idaho Transportation Department

May 4, 1999

Introduction

Following the February 11, 1999, meeting of the Idaho Transportation Board, the Director established a process improvement team to address concerns expressed by the metropolitan planning organizations within Idaho. Their concerns relate to the complexity of the project development process, and the need to inform applicants of project implementation requirements.

Team Purpose and Goals

The purpose of the CMAQ Process Improvement Team was to identify problems, design remedies, and implement those remedies through program guidance recommendations. Team goals included:

- Reviewing the CMAQ process from project approval in the program to final project delivery
- Identifying duplication of effort, unnecessary review steps, and other procedural issues
- Developing handouts with sample project type flow charts, timelines, and documentation needs
- Making recommendations regarding required reviews, timeframes, and other project requirements

The team focused on remedies which simplified the process where possible, then clarified and informed the process everywhere else. These remedies take the form of a final report for use in the forthcoming CMAQ Program Guidance.

Team Members

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Summary of Items Recommended by the CMAQ Process Improvement Team

Project Types and Programming Categories

- The following project types and programming categories should be used for the CMAQ program:

Road Surfacing and Construction (Unpaved, graveled and paved)	Base and Resurfacing
Bike and Pedestrian Route Construction	Bike/Pedestrian Trail
Transit Capital Purchases	Transit
Transit Start-Up & Operation	Transit Operations
Intelligent Transportation Systems Planning and Projects	Traffic Signal/ITS
Dust Control and Prevention	Misc. Improvement
Special Studies, Strategic Planning, and Air Quality Monitoring	Air Quality Study
Alternative Transportation Education/Promotion/Outreach	Transit Operations

Project Definition

- In order to clarify and flag what processes are streamlined and what are complex by nature, potential applicants should review the following table of project factors:

Streamlined	Complex
Capital Purchases	Construction
Special Studies and Strategic Planning	Road Surfacing
Planning and Monitoring	High level of Public Interest or Opposition
Project covered by 23 CFR 771.117 (c)	Project covered by 23 CFR 771.117 (d)
Dust Control and Prevention	Right of Way purchase required
ITS Planning and Traffic Control Measures	Historical/Archeological Issues
No Right of Way purchase required	Contaminated Sites and Biological Sites
Experienced Applicant	Complicated financial (match)
Bike lane striping on existing roads	Special Permits
Little or No R/W Purchase Required	Multi-year or phased projects
Little layout changes to road connections	Limited financial/technical resources of applicant
No social/economical/environmental sensitivity	Inexperienced applicant
	Relocation agreements for: Utilities, Railroads, Drainage, etc.

Construction and Non-Construction Project Types

- *Construction Project Types:*

1. Road Surfacing and Construction
2. Bike and Pedestrian Route Construction
3. Some ITS projects
4. Intermodal facilities requiring Construction

The following items are required for all Construction projects:

1. Use of existing ITD 2435 (Local Federal-Aid Project Request Form), 1150 (Project Cost Summary Sheet), and 654 (ITD Preliminary Environmental Evaluation Form),
2. Detailed field review (for budget and scheduling purposes),
3. Line item budget,
4. Project schedule with appropriate milestones, and
5. Air Quality Analysis

- *Non-Construction Project Types:*

1. Transit Capital Purchases
2. Transit Start-Up and Operation
3. ITS Planning
4. Dust Control and Prevention
5. Special Studies, Strategic Planning and Air Quality Monitoring
6. Alternative Transportation Education/Promotion/Outreach

The following items are required for all Non-Construction Request/Applications (as part of a new, singular application form):

1. Date, Project Name, Location, District
2. Project Description, Purpose and Character of Proposed Project
3. Project schedule with appropriate milestones
4. Line item budget
5. Contractual or Sponsor Staff Work Effort
6. Capital Purchase (Number of Units, Unit Price, Local Share, Local Match ($ and %), Source Match Type (Hard, In-Kind, Private), Final Cost
7. Other Applicable Requirements (Buy America, etc.)
8. Air Quality Nonattainment or Maintenance Area Name and Pollutant Type
9. Air Quality Analysis
10. Existing System/Network (Specify) or New System/Network
11. Part of Existing Transportation and/or Air Quality Plan (Name, Date, and Citations for applicable plans)
12. District Number and Review Signature
13. Signature of Applicant

<u>Special Projects Flowcharts</u>

- Strike the existing process description and flowchart in the design manual. Instead, provide a new reference in Section 4.2.1 of the ITD *Design Manual*, Application of Design Standards: Design Policies, Standards, Guides, and References, to a stand-alone guidance document which supercedes those requirements and applies only to CMAQ projects. This guidance document would be updated as needed to address any changes, improvements, or additional requirements. The stand-alone guidance would include, at a minimum, the Transportation Board Policy, Administrative Policy, Application Packet, Sample Project Categories and Types, and Special Projects Development Process Description and Flowcharts.

Buy America Requirements (for Construction and Non-Construction Projects)

- The requirements of the Buy America program are summarized as follows:

1. Federal funds may not be obligated unless steel, iron, and manufactured products used in such projects are produced in the United States.
2. These requirements apply to all purchases, including material and supplies funded as operating costs, if the purchase exceeds $100,000.
3. Four exceptions can serve as a basis for a waiver:
   If the application is not in the public interest,
   If such materials and products are not produced in necessary quantity or satisfactory quality,
   If buses and other rolling stock produced in the U.S. exceeds 60% of foreign construction, and the parts are assembled in the U.S., and/or
   If inclusion of domestic material increases total project cost by more than 25%.
4. A general waiver of $100,000 (small purchase threshold) has been issued by FTA.

Program Outreach Component

- A program outreach component will begin in 2000. The effort includes:

1. LHTAC, MPOs, and IDEQ, working with ITD to coordinate a CMAQ Workshop component within annual Local Public Agency Meetings at each of the Districts.
2. The use of a letter of interest from potential applicants to request an application.
3. The appointment of a formal District contact, either the Local Roads Coordinator or the District Planner. This contact would be trained in the revised process and serve as an ombudsman, advocate, and mentor through the project application process.
4. LHTAC maintains monthly communications with 283 local highway organizations, and will advise locals of upcoming meetings and program solicitations.

Average Timeframes for Major Tasks Associated with Construction Projects

- The following table identifies dates as calendar days per major task. With certain projects, some tasks will be required and others will not. Similarly, some major tasks can run concurrently and others are subsequent to the completion of prior tasks.

Construction Projects: Major Tasks	Range of Calendar Day Estimates	Average Calendar Days By Task
Program Project Approval	15-90	50
Survey Work	90-180	130
Concept Scoping /Approvals	61-190	118
Preliminary Design	70-480	230
Utilities/Railroad	130-230	175
Environmental Clearance	98-208	169
Right of Way Certification	240-510	442
Hearing	60-130	86
Design Approval	20-240	117
Final Design	90-436	328
Bridge Plans	125-495	287
CA Submittal	70-277	152

Average Project Costs By Type: A Historical Analysis by District

RANGE AND AVERAGE COSTS BY CMAQ PROJECT TYPE BY DISTRICT
(Averages rounded to nearest $1,000)

District	Project Type	Range of Costs	Average Cost
1	Base and Resurfacing-Paving	$60,000-$476,000	$234,000
1	Misc. Improvement-Flusher Truck (per truck)	$122,500-$155,000	$140,000
1	Misc. Improvement-Sweeper Truck (per truck)	$104,000-$127,000	$116,000
1	Misc. Improvement-Deicer Storage Tank (per tank)	$9,000-$10,000	$10,000
1	Transit Operations	N/A	$265,000
1	Transit-Bus Purchase (per bus cost)	$84,333-$99,000	$88,000
1	Transit-Van Purchase (per van cost)	N/A	$22,800
2	Transit-Van Purchase (per van cost)	N/A	$33,000
2	Transit-Bus Purchase (per bus cost)	N/A	$50,500
3	Base and Resurfacing-Park and Ride Lot	$157,000-$624,000	$391,000
3	Bike/Pedestrian Trail	$81,000-$1,169,000	$350,000
3	Transit-Bus Purchase (per bus cost)	$110,000-$399,500	$255,000
3	Traffic Signal Interconnect	$246,000-$959,000	$580,000
3	Transit Operations	$50,000-$1,088,000	$323,000
3	Transit-Van Purchase	$25,000-$36,000	$26,000
3	Air Quality Study (cost per study)	$130,000-$300,000	$230,000
3	Misc. Improvement-Sweeper Truck (per truck)	$120,000-$144,000	$136,000
3	Misc. Improvement-CNG Fueling Facilities/Depot	$160,000-$600,000	$380,000
4	Transit-Bus Purchase (per bus cost)	$127,500-$195,000	$150,000
4	Traffic Signal Interconnect	N/A	$905,000
5	Bike/Pedestrian Trail	N/A	$369,000
5	Base and Resurfacing-Paving	$50,000-$401,000	$207,000
5	Misc. Improvement-Deicer Storage Tank	N/A	$20,000
5	Misc. Improvement-Sweeper Truck	$80,000-$171,000	$138,000
5	Misc. Improvement-Flusher Truck	$110,000-$125,000	$118,000
5	Transit Operations	N/A	$30,000
5	Air Quality Study	N/A	$98,000
5	Misc. Improvement-Bike Racks/Storage	N/A	$40,000
5	Transit-Bike Racks	N/A	$6,000
5	Transit-Bus Purchase (per bus cost)	$62,000-$315,000	$221,000
6	Bike/Pedestrian Trail	N/A	$201,000
State	Air Quality Study (per study cost)	N/A	$164,000

Sample of Costs per Mile for Paving/Resurfacing and Bike/Pedestrian Trail Projects

- A sample of costs per mile for paving and bike/pedestrian trail projects was compiled to support the need for unit cost information on future project applications of this nature.

Project Type/Location	Total Cost	Length (miles)	Cost per Mile
Paving-District 1	$60,000	0.23	$260,870/mile
Bike/Pedestrian Trail-District 3	$1,169,000	1.4	$835,000/mile
Bike/Pedestrian Trail-District 3	$480,000	2.95	$162,712/mile
Paving-District 5	$210,000	5.83	$36,021/mile
Bike/Pedestrian Trail-District 5	$369,000	1.4	$263,571/mile

Average Project Costs By Type: A Statewide Historical Analysis

STATEWIDE AVERAGE COSTS BY CMAQ PROJECT TYPE
(Averages rounded to nearest $1,000)

Project Type	Range of Costs (All Districts)	Average Project Cost (Based on Sum of District Averages)
Base and Resurfacing-Paving	$50,000-$476,000	$220,000
Misc. Improvement-Flusher Truck (per truck)	$110,000-$155,000	$129,000
Misc. Improvement-Sweeper Truck (per truck)	$80,000-$171,000	$130,000
Misc. Improvement-Deicer Storage Tank (per tank)	$9,000-$20,000	$15,000
Transit Operations	$30,000-$1,088,000	$206,000
Transit-Bus Purchase (per bus)	$50,000-$399,500	$153,000
Transit-Van Purchase (per van)	$22,800-$36,000	$27,000
Bike/Pedestrian Trail	$81,000-$1,169,000	$307,000
Traffic Signal Interconnect	$246,000-$959,000	$742,000
Air Quality Study (per study)	$98,000-$300,000	$164,000
Misc. Improvement-CNG Fueling Facilities/Depot	$160,000-$600,000	$380,000
Misc. Improvement-Bike Racks/Storage	N/A	$40,000
Base and Resurfacing-Park and Ride Lot	$157,000-$624,000	$391,000
Transit-Bike Racks	N/A	$6,000

Application Process and Implementation Feedback Process

- A formal feedback process should be included as part of the project close-out documentation phase to ensure continued improvements and a long-term quality focus. The following steps should be included in such a process:

  1. Survey applicants as part of project close-out documentation/completion review form.
  2. Determine what projected and actual line item costs were, as available.
  3. Determine what original and actual schedule milestones changed.
  4. Follow-up by telephone sample of less successful projects (Applicants and District Contacts).
  5. Identify "what went well" or recommend "mid-course corrections."
  6. Follow-up with potential applicants who formally requested an application packet, but did not apply. Determine reasons why and consider input for following application cycle.

Other Recommendations

- The project's sponsor will certify that a detailed field review is completed as part of a construction project application. This review will result in a more accurate preliminary budget analysis and timeframe expectations. This analysis can be performed in-house or may be contracted out. The field review will result in the completion of a detailed checklist for mile-by-mile costs and needs (i.e., culverts, drainage, R/W, cuts/fills, transmission lines, etc.) It should be completed by someone with appropriate expertise, who is also responsible for preparing the cost estimate used in the application.

- Each District should formally appoint a District contact, either the Local Roads Coordinator or the District Planner. This contact would serve as an ombudsman, advocate, and mentor throughout the project application process.

- Check boxes should be included on the application to indicate whether a construction project's costs are: a rough estimate, based on a preliminary design, or based on a final design. Project evaluation rating criteria will reward project submittals which are based on a final design. However, it will not preclude projects based on rough or preliminary estimates.

- A check box should be included on the application form to indicate whether additional R/W is required, and whether it has already been acquired by purchase or donation. The application should also indicate that advanced notice and confirmation of all donated land is required. The check box will flag donated land for Technical Review Committee consideration and evaluation.

- A statewide limitation of $2,000,000 per year in out years should be applied to long range, multi-year construction projects. This limitation will allow such projects to be added in out years while maintaining funding for short-term, streamlined projects. Phasing of projects, consistent with Board Policy, is highly encouraged for the same reason.

- As an option, local public agencies should be allowed to contract out to private "ITD-certified" firms for design review and approval (concept design and intermediate). This contractual provision would address resource shortages within ITD and potential project delays for construction projects. For example, the State of Oregon allows a PE to provide outside review and signoff on project design.

- The State and Local Agreement should be used as a formal commitment between the state and local agencies to ensure accountability.

- A detailed project schedule with appropriate milestones should be required as part of the application. Once the project is approved, the district contact would negotiate a mutually acceptable timeline with the applicant to define reasonable review and submittal timeframes and a critical path schedule that would become part of the State and Local Agreement.

- Project applicants should be advised that construction projects generally exceed $100,000 in cost and require several years of processing time. Inexperienced applicants may want to choose less burdensome projects or options to avoid complications.

- The existing CMAQ process description and flowchart in the Local Public Agency Guidelines Manual should be updated to reflect the new policies and program guidance. As with the Design Manual, the LPA Guidance Manual should include a reference to a stand-alone guidance document which supercedes those requirements and applies only to CMAQ projects. This guidance document would be updated as needed to address any changes, improvements, or additional requirements. The stand-alone guidance would include, at a minimum, the Transportation Board Policy, Administrative Policy, Application Packet, Sample Project Categories and Types, and Special Projects Development Process Description and Flowcharts.